Lesson Three

Objective Match:
Pre-Columbian Settlement and People

Timeline:
pre-history - Present

THE OCEAN AND THE NATIVE PEOPLE OF CALIFORNIA

The influence of the sea on human settlement in California long preceded European contact. Although most of the areas of our present state were populated, villages and other important native sites were concentrated along the coast, bays and major rivers.

The ocean and the rivers offered a wealth of resources that natives used for their own livelihood and for trading with neighbors. Three distinct boat types were well developed in native California by the time of European contact. They were: the tule balsa used by many tribes, the planked canoe of the Chumash people called a tomól, and the dugout redwood canoe of the Yurok people.

Purpose: Students will learn about Native watercraft construction, and about some of the ocean and river resources which they used.

What to Know:

The Tule Balsa

Native People in our area, such as the Miwok, Ohlone, and Yokut, developed reed balsas (rafts) made from fresh water tules. The Coastal Miwok called them **sákas**. Tule reeds were very abundant along the margins of the bay, in the delta, and in the seasonal wetlands of the Central Valley.

Reed balsas were made when needed and often discarded after they became waterlogged. The design was simple and required no special tools aside from a sharp edge to harvest the reeds (a sharpened clam shell would do). The tule was cut and, if the builder had the time, set aside to dry (dried reeds are lighter). Tule stems are hollow, like straws, and therefore buoyant. The

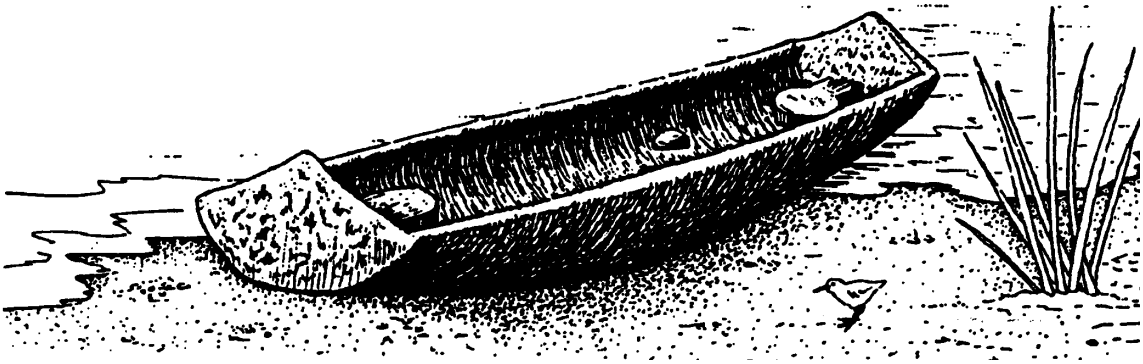
builders would split some of the reed to make rope, while the rest of the tules were bundled into two or three bunches. The bundles would be tied up with the rope and then joined together into a raft.

The finished boat could carry several hundred pounds, and was propelled most often with a two bladed paddle. Native People used them to fish from and to travel across the bay or along rivers and creeks. Native People in the Central Valley, like the Miwok and Yokuts, needed them during the rainy winters to travel in the extensively flooded areas which surrounded their settlements, as well as to travel on rivers like the Sacramento.

The Dugout Canoes of the Yokut

To the north, the Yokut and other coastal people built dugout canoes to travel along the coast and in the Klamath river. These crafts were fashioned by hollowing out a solid redwood log. Trees which had been blown down by storms or struck by lightning were traditionally used.

The canoe builder would begin by splitting the log in two lengthwise creating blanks for two boats. The splitting was often done with a elkhorn wedge and a stone maul or mallet.[1]



The grain of the wood* is closer together at the center of the log making the center much heavier than the outside. Therefore, to make the canoe more stable the center of the log would become the bottom of the canoe while the outside of the log was carved into the top (this is counterintuitive due to the shape of a split log).

The canoe builder often used slow, smoldering fires to help hollow the log. In order to control the fire they spread flammable pitch on the area they wanted burned. Builders would then use shell-bladed **adzes** to carve out the boat.

The Yokut commonly used the redwood canoe to travel up and down the Klamath river which winds down the middle of their historic lands. To travel downriver (with the current) a wide, single bladed paddle was used to steer through swiftly flowing water. Upriver (against the current) one or two people would maneuver the canoe along the edges of the river (where the current is weakest) using a longpole. Women were often seen navigating the Klamath by themselves, traveling upriver with their boats loaded to the top, a 25 mile journey from Pecwan to the ocean.[1]

The Tomól of the Chumash

To the south, the Chumash people of the Santa Barbara coast developed the only planked boat in North America prior to European contact. These were built by a respected group of craftpeople among the Chumash called "The Brotherhood of the Tomól."[2]

The canoes were built using driftwood which had been rough hewn into **planks** using a sharp- edged tool such as an adze. The planks were sanded smooth with shark skin, fitted and held together with tar. Holes were then drilled into adjacent planks to sew them together with plant fiber rope. To finish the boat all the seam and stitch holes would be sealed using natural tars or pitch.

Father Pedro Font of the DeAnza expedition witnessed the building of a tomól in 1775, and wrote in his diary: "some... are decorated with little shells and are painted red with hematite (iron ore). I measured one and found it to be thirty-six palms** long and somewhat more than three palms high."[3]

Anza himself wrote: "In each village they have fifteen to twenty canoes in use and in each one they were making not less than seven to ten new ones."[3]

The Chumash used these to fish and hunt seals and sea lions. They travel along the coast and to the Channel Islands on which there were substantial native settlements. It is estimated that thousands of Chumash lived on the three northernmost islands: San Miguel, Santa Rosa, and Santa Cruz.[3]

Some of these crafts are still constructed by modern Native builders and used for ceremonial and educational purposes. It is important to remember that some of the diverse Native American cultures of California remain alive and in our communities today.

Activity 1: Making Tule Rope

materials: white glue, a box of plastic straws, scissors, green paint

Give each students between 5-10 straws. Have them make a small cut on **one** end of each straw, about half an inch. After applying a small amount of white glue, students should insert this end into the uncut end of another straw. Each student will then have a length of straw several feet long. Paint these lengths green and let them dry.

On another day, have each student cut the lengths almost in half lengthwise. Students should cut from one end and stop short of the other end by 2-3 inches. Now secure the uncut end to a stable place. Students will make the rope by twisting the two halves around each other.

You can have the students one long length of rope by joining their ropes together. A rope segment should be placed between the halves of the preceding segment about 1 foot before the end of twisting. This way the new segment becomes an extra strand in the segment currently being twisted.

Secure the very end with a knot or tape. You now have a simulated length of tule rope. This method is exactly as Native People created rope out of many sturdy plant fibers.

Activity 2: Measuring Out A Tomól

materials: chalk, measuring tape

Father Pedro Font measured one example of a Chumash tomól using the old measure of a 'palm.' This measure was based on the width of an outstretched adult hand. It is approximately a foot.

Have students compare the width of their outstretched hands and that of the teacher. based on this comparison, how many 4th grade palms would 36 palms be? Using the result have students measure out this length using their palms in an appropriate part of your playground.

Draw out a tomól to scale based on the illustration included. Mark the plank seems, stitches, and using colored chalk color it red.

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[1] Redwood National and State Park Pamphlet, The Making of a Yurok Canoe, 1994

[2] Santa Monica Mountains NRA, One Land: Many People, Many Ways, 1997

[3] George Emanuels, California Indians: An Illustrated Guide, 1994

* The grain of the wood is a result of the trees annual rings. As a tree matures it tends to grow at a slower rate making the wood denser toward the center.

** a palm would be the measure between the thumb and pinkie when stretch to their widest. keep in mind that this was an adult palm.